Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	)	WT Docket No. 06-150
	)	
	)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	)	PS Docket No. 06-229
	)	
	)	
Amendment of Part 90 of the Commission's Rules	)	WP Docket No. 07-100
	)	

COMMENTS OF THE CITY OF MESA ARIZONA

Introduction and Summary

The City of Mesa, Arizona (Mesa) hereby submits these Comments in response to the Fourth Further Notice of Proposed Rulemaking ("*FNPRM*") released by the Federal Communications Commission ("FCC" or "Commission") in the above-referenced proceedings.[1] In the *FNPRM*, the Commission seeks comment on an appropriate technical framework to facilitate the deployment and operation of a nationwide, interoperable public safety wireless broadband network.

The development and deployment of a nationwide, interoperable, wireless broadband network is a critical public safety goal, and Mesa appreciates the Commission's efforts to achieve this goal. As it develops a framework for public safety interoperability in the 700 MHz band, the Commission should ensure that it strikes an appropriate balance between promoting early public

[1] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, *Amendment of Part 90 of the Commission's Rules*, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 26 FCC Rcd 733 (2011) ("*FNPRM*").

safety LTE broadband deployment and ensuring long-term nationwide interoperability. It is important that the Commission recognizes the efforts of public safety early adopters of the LTE wireless broadband technology, as the technical and operational lessons learned from early deployments will be critical to developing the future nationwide, interoperable public safety wireless broadband network. Therefore, the Commission's collective "next steps" should ensure an efficient and flexible model for public safety moving forward. At the same time, the Commission should minimize the risk of future regulatory overhauls that would impede the pioneering efforts of public safety LTE early adopters.

The *FNPRM* contains a high degree of detail in almost every aspect of constructing and operating a nationwide, interoperable public safety wireless broadband network. In fact, the sheer number of issues raised in the *FNPRM* suggests that the Commission may have overreached in many operational areas. Many of the items discussed in the *FNPRM* may be prematurely presented, as there is considerable additional work to perform before specific solutions can be suggested, discussed, selected, or regulated. Moreover, some issues raised in the *FNPRM* are outside of the scope of ensuring interoperability. Early builders and system operators need to determine where and how to build out a local, regional, or statewide part of a nationwide network, and detailed, prescriptive regulations in this area may be counterproductive.

In addition, the Commission and the public safety community must recognize that the rate of change for commercial wireless technologies is extremely high. In some cases, the Commission may not be able to act quickly enough to keep up with the rapidly evolving wireless broadband technology marketplace. Furthermore, there are multiple nationwide public safety operational needs that the Commission simply may not be able to address effectively. Therefore, a Nationwide Network Governing Entity ("NNGE"), working directly with local, tribal, state, and federal public safety organizations, should address the evolving operational and interoperable challenges to ensure

a successful nationwide public safety broadband network. The NNGE should be predominantly be made up of early builders, system operators and public safety representatives that will have the necessary legislated authority to implement and manage the nationwide network.

Mesa agrees with the Commission in that a minimum set of applications should be defined by public safety. Federal funding for these nationwide applications would ensure that they will be deployed and nationwide interoperability is achieved.

I. ABOUT Mesa

Mesa was granted a conditional broadband waiver by the FCC on May 12, 2010. It subsequently entered into a spectrum lease with the Public Safety Spectrum Trust, which was approved by the Commission on September 2, 2010. It currently has funding available to deploy a local core LTE broadband system. However, Mesa is very concerned with the risk of future regulatory overhauls that would impede us or any other public safety LTE early adopters from being able to build, maintain and operate the broadband wireless network.

II. COMMENTS ON SPECIFIC ISSUES RAISED IN THE *FNPRM*

Architectural Framework and Guiding Principles (*FNPRM* ¶¶ 18-19, 26)

Although the issues discussed in this portion of the *FNPRM* are addressed in more detail below, Mesa notes that the nationwide architecture sections do not address the myriad of potential network and business model variations that could occur. Mesa is currently uncertain in what the final architecture of the network is going to be. The nationwide framework must accommodate as much as possible, all viable business models and each region's interest in operating its portion of the nationwide network.

Evolution (*FNPRM* ¶¶ 24-26)

Mesa is pleased to see that the Commission recognizes the need for the nationwide public safety broadband network to evolve. The technical rules and interoperability framework must not lock public safety into stagnation, and backwards compatibility must be balanced by continual improvements. Undoubtedly, there will be an enhanced wireless technology after LTE. When it arrives, there must be a framework in place that enables a path for successful migration to new technologies. Mesa recommends the NNGE regularly evaluate existing systems and costs for migration to different releases or technologies.

The Commission should ensure that any technical rules allow public safety to balance interoperability, progress, and costs. Just like commercial operators do today, it is highly possible that public safety may eventually need to operate multiple technologies simultaneously to support legacy users as well as new technologies. The Commission should also ensure that any new rules allow public safety to both interoperate and sustain the communications solutions that meet their evolving needs and factor in all technical, interoperable, and financial considerations on an ongoing basis.

Roaming Authentication (*FNPRM* ¶¶ 21-22, 37)

Traversing the nationwide public safety network should not be considered roaming. Because there's still is no nationwide architecture or governance defined, it's not clear which entity or group of entities will be responsible of funding backhaul and clearinghouse costs. At this time, too many unknowns exist related to roaming O&M cost to early builders.

Roaming Framework (*FNPRM* ¶¶ 35-36, 87-89)

Mesa believes a working group should begin tackling a nationwide network and application framework to address these issues. The working group should address the operability, interoperability, reliability, and cost implications of the framework for the baseline and optional nationwide applications.

Local public safety representatives should choose their (commercial) roaming partner(s); the Commission should not mandate (commercial) roaming partner(s). There is sufficient incentive for the commercial carriers to enter in to roaming agreements with public safety without mandates.

Mesa agrees that each local operator within the nationwide public safety network should be required to allow network access for all visiting public safety users regardless of their mission. However, the specific priority level the visiting user receives requires more public safety study.

Interconnection with Legacy Networks (*FNPRM* ¶ 58)

As the FCC asserts, capabilities do exist to provide voice services across narrowband and broadband networks. These services, however, are not standardized and, therefore, are not always interoperable. These standards must be developed prior to mass deployments of PTT over LTE applications to avoid the interoperability issues that have plagued public safety LMR systems.

Priority Access (*FNPRM* ¶ 46)

The LTE priority mechanisms, are for priority access within the public safety nationwide network, is anticipated to be sufficient for public safety. The Commission should not regulate how public safety uses the Quality of Service ("QoS") Class Identifier ("QCI") and the Allocation

Retention Priority ("APR").[2] During the initial years of operation of the nationwide broadband network, public safety will gain experience on how to manage capacity at an incident; it is only through this experience that the optimal configuration will surface.

NNGE will rely on technically qualified advisors to help understand and address such issues. Because the priority needs will be dynamic, the configurations will be dynamic and should not be regulated.

Coverage Reliability (*FNPRM* ¶¶ 74-75)

Public safety should decide how to use the resources available to it and how to operate the nationwide network. Coverage reliability is in this category of those items in the instant *FNPRM* that should not be regulated by the FCC.

Interference Coordination (*FNPRM* ¶¶ 76-79)

The coordination of interference among system operators will be critically important. Mesa sees no reason to mandate or regulate the use of the Inter Cell Interference Coordination ("ICIC")[3] between neighbors or within a network.

Performance (*FNPRM* ¶¶ 59-62)

Public safety users will apply tremendous pressure to network operators to deliver peak performance from the public safety broadband network. There is no need for the FCC to regulate "baseline operability" of the broadband network as a result. The Commission does not do this for narrowband, commercial, and most other networks, and we see no reason why it should do so here.

[2] The APR indicates the priority of allocation and retention of the service data flow. The APR resolves conflicts in demand for network resources.

[3] ICIC facilitates interference control and coordination between multiple sites in a LTE network architecture.

Network Capacity (*FNPRM* ¶¶ 63-64)

Similar to the discussion on other design and other operational regulations, the FCC should not regulate network capacity. Public safety users will apply tremendous pressure to network operators to deliver maximum network capacity to public safety broadband users.

Security and Encryption (*FNPRM* ¶¶ 65-69)

Similar to the discussion on other design and other operational regulations, the FCC should not regulate security and encryption.

Robustness (*FNPRM* ¶ 70), Coverage (*FNPRM* ¶¶ 71-74), In-Building Communications (*FNPRM* ¶¶ 123-126), and Deployable Assets (*FNPRM* ¶¶ 127-128)

Similar to the discussion on other design and other operational regulations, Public safety users will apply tremendous pressure to network operators. The FCC should not regulate robustness, in-building coverage, or deployable assets.

Applications to Be Supported for Roamers (*FNPRM* ¶ 93)

Notwithstanding our objection to characterizing transitions within the nationwide public safety network as "roaming", the existing and changing needs of application support on a visited system must be managed directly by the public safety community. As discussed above, Mesa envisions a minimum set of applications operating on the public safety network. In these cases, the local operator may be required to not only support (*i.e.*, transport the data for) the application, but provide or operate the application (*e.g.*, operate a server that provides the application as a local service). The decisions regarding nationwide applications should be up to public safety.

Public Safety-to-Public Safety Roaming Rates (*FNPRM* ¶¶ 94-96)

Mesa encourages a no-cost approach to public safety "roaming" within the nationwide public safety network. There should be no financial impediments to mutual aid. However, who will carry the financial burden of roaming O&M costs have not been defined yet.

Roaming by Federal Users (*FNPRM* ¶¶ 104-105)

Mesa fully endorses the Commission's objective to provide Federal user access to the nationwide public safety broadband network. We are all partners in responding to local and regional emergencies and have common objectives to protect the safety of life, health or property. Mesa eagerly supports the highest degree of interoperable communications achieved over the sharing of common wireless networks and applications. However several issues still exist regarding will this be structured and funded. Financial impact to local operators must be addressed in any option that is evaluated.

Network Operations, Administration and Maintenance (*FNPRM* ¶ 117)

This is the most complex and sensitive issue we are facing. This involves provisioning, customer service, troubleshooting and many other processes. It will be the determining factor on whether or not this project will be viable or not. An appropriate balance between promoting early public safety LTE broadband deployment and technical and operational lessons learned from early deployments will be critical to developing the future nationwide, interoperable public safety wireless broadband network.

Devices (*FNPRM* ¶¶ 119-122)

Device selection should be at the discretion of the local public safety agencies. They alone can balance the needs of their user base with cost. The FCC should not regulate nor mandate device options for local, tribal, regional, and state public safety users.

Operation of Fixed Stations and Complimentary Use of Fixed Broadband Spectrum (*FNPRM* ¶¶ 129-130)

Mesa supports that operators decide how to use the LTE network for temporary or permanent fixed applications as long as such applications do not have significant impact on the availability and performance of the network public safety first responders.

Section 337 Eligible Users (*FNPRM* ¶¶134)

After having the opportunity to review multiple responses to Mesa's Request for Proposals (RFP), business models suggested that, building, operating and maintaining a 700MHz LTE broadband network exclusively for "first responders" as Section 337 current interpretation stands, would be far beyond the financial justification and capabilities of most jurisdictions even with grant support. The same business models also suggest that by permitting other public service users, such as electric, water and gas utilities, and other municipal agencies who also respond to emergency situations throughout the nation, will make such a private network economically feasible. Such users could operate on the system as secondary users without affecting first responder operations.

III. CONCLUSION

Mesa appreciates the Commission's efforts to facilitate the development and deployment of a nationwide, interoperable public safety wireless broadband network in the 700 MHz band. As it

develops a framework for public safety interoperability on the nationwide network, the Commission should refrain from imposing unnecessary prescriptive regulations that could hinder public safety's ability to keep up with the rapidly evolving wireless broadband technology marketplace. In addition, because there are multiple nationwide public safety operational needs that the Commission simply may not be able to address effectively, a NNGE, working directly with local, tribal, regional, state, and Federal public safety organizations, should address the evolving operational and interoperable challenges to ensure a successful nationwide public safety broadband network. Until a NNGE is created, the PSBL should continue to fulfill the governing functions mentioned throughout these comments.

Respectfully submitted,

CITY OF MESA
By: _____/s/_____
Randy Thompson, Communications Administrator

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